

REMARKS

Claims 20, 22-39 and 41-44 remain in the application, the claims having been editorially amended. Reconsideration of the application and allowance of all claims are respectfully requested in view of the above amendments and the following remarks.

The claims have been amended to address the section 112 issues raised by the examiner in Paragraphs 3 and 4 of the Office action.

The prior art rejections discussed in paragraphs 6 and 7 of the Office action are respectfully traversed.

Kennedy (U.S. Patent No. 5,999,856) discloses an Implantable hearing assistance system with calibration and auditory response testing. Kennedy refers to "feedback" in two somewhat different meanings. On one hand, the term is used to signify the auditory response to a stimulus. this appears, e.g., in col. 9, lines 30 - 41:

"In one such embodiment, electronics unit 225 receives an electrocochleographic or other auditory response signal through response lead 400 from implantable response sensor 405 or other mechanism for receiving a feedback signal such as the auditory response signal. The auditory response signal received through response lead 400 results either from calibration stimuli introduced into the middle ear 35 or inner ear regions, or from output stimuli provided in the middle ear 35 or inner ear in response to sound waves or mechanical vibrations received from input transducer 210 and processed by electronics unit 225. "

On the other hand, in other parts of the publication the term feedback is used to refer to the propagation of mechanical vibrations provided by the output stimulator and to the input transducer. This appears, e.g., in col. 10, lines 34-43:

"FIG. 8 is a flow chart illustrating another embodiment of a feedback self-test function provided by the invention, such as by the

embodiment of FIG. 5. It is possible for mechanical vibrations provided by output stimulator 215 to generate an undesirable mechanical positive feedback signal which vibrates input transducer 210. Such mechanical feedback can result from any mechanical or acoustic coupling in the middle ear. In particular, if incus 45 is not removed, it may provide a mechanical feedback path for vibrations from output stimulator 215 to input transducer 210. FIG. 8 illustrates one embodiment of a feedback-self test for detecting the presence of mechanical feedback, and adjusting signal processing parameters accordingly."

Kennedy suggests alleviating problems with unwanted feedback by adjusting amplification gain to reduce the effect of this type of feedback. Kennedy provides a calibration module for implementing a self-calibration function. E.g., in col. 9, lines 58 to 62:

"a calibration stimulus is delivered, such as by output stimulator 215, in response to the calibration output signal provided by electronics unit 225. At step 610, an auditory response signal is monitored. "

Thus, Kennedy provides calibration for the purpose of testing the patient's audiometric threshold.

Regarding claim 26, the examiner refers to Fletcher (U.S. Patent No. 4,049,930) in view of Kennedy.

Claim 26, as now amended, distinguishes Fletcher notably through the recitation of:

a telecoil input transducer for transforming an input signal into a first electrical signal,

activation means for operator activation in order to cause said test controller to initiate a test procedure,

... and wherein said output transducer is adapted to generate a magnetic field, that is picked up by said telecoil input transducer.

The examiner finds in Kennedy a teaching of a hearing aid with self calibration as well as a self test, which further includes a drive coil driven by magnetic fields and electromagnetic output transducers. However, the self test referred to in Kennedy is a test for detecting the presence of mechanical feedback. Kennedy does not relate to a test to determine a hearing aid defect as recited in claim 26.

The output transducer according to Kennedy is also quite different from the output transducer in the present application. The Kennedy output transducer is an electrical-to-mechanical device that couples mechanical vibrations to the ossicular chain. An implanted receiver detects and rectifies a transmitted signal, driving an implanted coil. A resulting magnetic field from the implanted drive coil vibrates an implanted magnet that is affixed to the incus. However, the claims of the present application recite an output transducer for converting an electrical signal into sound. Nothing in Kennedy suggests an output transducer suitable for outputting sound.

Claim 26 recites an output transducer adapted for emitting sound, and adapted to output also an electromagnetic signal. None of the prior art suggests using this type of dual outputs from an output transducer. None of the prior art provides testing a telecoil transducer.

Claim 30 distinguishes over Fletcher notably through the recitation of

activation means for operator activation in order to cause said test controller to initiate a test procedure, and

an adaptive feedback canceller for suppression of acoustic feedback, wherein said test controller is adapted to verify the operation of said adaptive feedback canceller.

Fletcher discloses a malfunction detection system for conducting tests at timed intervals, once the system has been turned on. Kennedy provides a feedback-self test for detecting the presence of mechanical feedback, and adjusting amplification gain, if necessary, to reduce the effect of this type of feedback. This is not an adaptive feedback canceller. None of the prior art teaches verifying the operation of an adaptive feedback canceller.

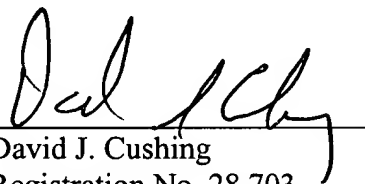
Regarding the dependent claim 44, the examiner has referred to the preceding explanation, and has mentioned that Fletcher discloses generation of a warning due to a defect. This remark is not understood. Neither claim 44 nor its parent claim 30 refer to the generation of a warning. Claim 44 depends from claim 30 and thus distinguishes the prior art for the reasons given above in the context of claim 30.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment
USSN 09/899,991

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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